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Proposal for amendments to the Consolidated Resolution on the common specification of light source categories (R.E.5)

Proposal for amendment 10 to the Consolidated Resolution on the common specification of light source categories (R.E.5)

Submitted by the Working Party on Lighting and Light-Signalling*

The text reproduced below was adopted by the Working Party on Lighting and Light-Signalling (GRE) at its ninetieth session (ECE/TRANS/WP.29/GRE/90, para. 11). It is based on ECE/TRANS/WP.29/GRE/2024/2. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration at their November 2024 sessions.

* In accordance with the programme of work of the Inland Transport Committee for 2024 as outlined in proposed programme budget for 2024 (A/78/6 (Sect. 20), table 20.5), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



Sheet H11_LED_r/3, replace by a new sheet H11_LED_r/3, to read:

“

Category H11

Sheet H11_LED_r/3

Alternative configurations

Two alternative configurations are allowed and the technical description given by the manufacturer contains the information which of them applies. The differences between both configurations affect only the “Screen projection requirements” and “Normalized luminous intensity distribution”. For reference purposes in the relevant paragraphs, the alternatives are called Configuration-1 (based on full photometric light source equivalence) and Configuration-2 (based on bi-directional light source design).

Screen projection requirements

The following test is intended to define the requirements for the apparent light emitting area of the LED light source and to determine whether the light emitting area is correctly positioned relative to the reference axis and reference plane in order to check compliance with the requirements.

In case of Configuration-1 the position of the light emitting area is checked by a box system defined in Figure 4 when operated at test voltage, which shows the projections when viewing from B (see sheet H11_LED_r/1, Figure 1) and from A and -A (see sheet H11_LED_r/1, Figure 1), i.e. along the C-planes C₀, C₉₀ and C₂₇₀ (as defined in Figure 6).

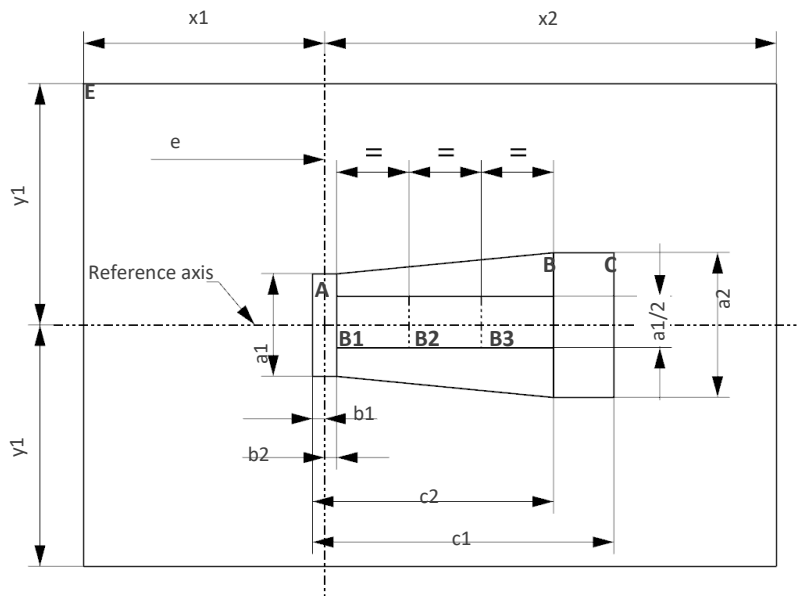
In case of Configuration-2 the position of the light emitting area is checked by a box system defined in Figure 4 when operated at test voltage, which shows the projections when viewing from A and -A (see sheet H11_LED_r/1, Figure 1), i.e. along the C-planes C₉₀ and C₂₇₀ (as defined in Figure 6). The distance z between the surfaces of the opposite light emitting areas shall not exceed 2.9 mm.

In both configurations, the proportion of the total luminous flux emitted into these viewing directions from the area(s) as defined in Figure 4:

- Total box area: $(A+B+C) / E$ shall be not less than 90%
- Area A: $A / (A+B+C)$ shall be not more than 10%
- Areas B₁, B₂ and B₃: B_1/B , B_2/B , B_3/B shall each be not less than 15%
- Area B: $B / (A+B+C)$ shall be not less than 72 %
- Area C: $C / (A+B+C)$ shall be not more than 22%

Figure 4

Box definition of the light emitting area (dimensions given in Table 2)



In both configurations, the contrast is checked by a box system defined in Figure 5 when operated at test voltage, which shows the projections when viewing from A and -A (see sheet H11_LED_r/1, Figure 1), i.e. along the C-planes C₉₀ and C₂₇₀ (as defined in Figure 6).”

Sheet H11_LED/6, replace by a new sheet H11_LED/6, to read:

“ **Category H11** **Sheet H11_LED/6**

Table 3 – Part 1
Test point values of normalized intensity (Black top area)

<i>LED light source of normal production</i>		
	<i>Minimum intensity (cd/klm)</i>	<i>Maximum intensity (cd/klm)</i>
γ	$C_0, C_{90}, C_{180}, C_{270}$	$C_0, C_{90}, C_{180}, C_{270}$
0°	n/a	10
10°	n/a	10
20°	n/a	10
30°	n/a	10

The light pattern as described in Table 3 – part 1 shall be substantially uniform, i.e. in between two adjacent grid points the relative luminous intensity requirement is calculated by linear interpolation using the two adjacent grid points. In case of doubt this may be checked in addition to verification of the grid points given in Table 3 – part 1.

Note: The angular range in Table 3 – Part 1 is equivalent to the black top of its counterpart H11 filament light source specified by γ_3 in sheet H11/3.

Table 3 – Part 2
Test point values of normalized intensity (Distortion free area)

<i>LED light source of normal production</i>				
	<i>Minimum intensity (cd/klm)</i>		<i>Maximum intensity (cd/klm)</i>	
	Configuration-1	Configuration-2	Configuration-1	Configuration-2
γ	C_0, C_{90}, C_{270}	C_{90}, C_{270}	C_0, C_{90}, C_{270}	C_{90}, C_{270}
50°	80	100	130	160
60°	80	115	130	175
70°	80	125	130	185
80°	80	130	130	190
90°	80	130	130	190
100°	80	130	130	190
110°	80	125	130	185
120°	80	115	130	175
130°	80	100	130	160
140°	80	80	130	145

The light pattern as described in Table 3 – part 2 (excluding the section between C_{90} and C_{270} and for Configuration-2 additionally excluding the section between C_{270} and C_{90}) shall be substantially uniform, i.e. in between two adjacent grid points the relative luminous intensity requirement is calculated by linear interpolation using the two adjacent grid points. In case of doubt this may be checked in addition to verification of the grid points given in Table 3 – part 2.

Note: The angular range in Table 3 – Part 2 is equivalent to the distortion free area of its counterpart H11 filament light source specified by γ_2 and γ_1 in sheet H11/3.”

Sheet H11_LED/7, replace by a new sheet H11_LED/7, to read:

“ Category H11 Sheet H11_LED/7

Table 3 – Part 3
Test point values of normalized intensity (Shading area of the lead-in wire of the counterpart filament light source)

	<i>LED light source of normal production</i>			
	<i>Minimum intensity (cd/klm)</i>		<i>Maximum intensity (cd/klm)</i>	
	$\gamma = 90^\circ$		$\gamma = 90^\circ$	
C-plane	Configuration-1	Configuration-2	Configuration-1	Configuration-2
C ₀	80	n.a.	130	n.a.
C ₃₀	80	50	130	130
C ₆₀	80	110	130	175
C ₉₀	80	130	130	190
C ₁₂₀	80	110	130	175
C ₁₅₀	80	50	130	130
C ₁₈₀	n/a	n.a.	n/a	n.a.
C ₂₁₀	80	50	130	130
C ₂₄₀	80	110	130	175
C ₂₇₀	80	130	130	190
C ₃₀₀	80	110	130	175
C ₃₃₀	80	50	130	130
C ₃₆₀ (= C ₀)	80	n.a.	130	n.a.

The light pattern as described in Table 3 – part 3 (excluding the section between C₁₅₀ and C₂₁₀ and for Configuration-2 additionally excluding the section between C₃₃₀ and C₃₀) shall be substantially uniform, i.e. in between two adjacent grid points the relative luminous intensity requirement is calculated by linear interpolation using the two adjacent grid points. In case of doubt this may be checked in addition to verification of the grid points given in Table 3 – part 3.

Note: Due to the shading area created by the lead-in wire of its counterpart H11 filament light source (opposite to the metal-free zone; see Figure 4 on sheet H11/2) there is no requirement in the C₁₈₀-plane."